

SOUTHERN RHODESIA.



REPORT

ON

The Public Health

FOR THE YEAR 1919.

Presented to the Legislative Council,
1920.

Salisbury, Rhodesia :
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1920.

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Report on the Public Health for the Year 1919.

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PART I.

In presenting my report on the work carried out by this Department during the year 1919 I must express regret that since 1915 it has been found impossible to print any part of the Public Health Reports on account of expense. An effort has been made to fill in the gap created by giving the figures for the last four years in the statistical tables and returns, which are printed in the appendix.

Public Health Legislation.

Extended powers are required by local authorities empowering them to provide for the instant isolation, maintenance and treatment of all cases of infectious and contagious disease, and to make regulations to meet emergencies as they may arise.

Legislation is also required giving power to the Government both to advise municipalities, village management boards and all local authorities in the carrying out of the provisions of the Health Acts which may be under their administration and the initiation of necessary sanitary reforms in their districts, and, in case of failure, to insist on these being carried out under penalty of prosecution.

It is hoped to present a Public Health Bill before Council shortly which will embody these provisions, and will conform to recent health legislation in the Union and elsewhere.

The only public health measure which became law in 1919 was the Leprosy Repression Ordinance, which now legalises the compulsory segregation of lepers, and provides for regulations governing the control and management of leper asylums and settlements.

The "Native Registration Amendment Ordinance, 1918," which provides for the periodic medical examination and treatment of natives in employment in towns applying for the enforcement of the Ordinance within their area, has been the subject of considerable controversy and correspondence during the year, and is so far a dead letter, in that no town has applied for the measure to be enforced.

A compromise has now been arrived at, and it is intended to inaugurate almost at once a system of medical inspection of all natives in employment in the towns of Bulawayo and Salisbury, and provide medical attendance and treatment, both out-patient and hospital, for all cases of disease which may be discovered.

There are no medical and pharmacy laws in force, with the exception of the Medical Act of the Cape Colony of 1830, which is a short act hopelessly out of date, and deals only with the admission to practice of medical practitioners and chemists.

A Medical, Dental and Pharmacy Ordinance was introduced in 1916, and passed the second reading, but was withdrawn in Committee on account of objections raised by certain of the elected members. These objections have mostly ceased to exist, and there would appear no reason why this measure should not now be re-introduced and become law.

Vital Statistics.

Since last census the European population has been estimated annually by taking the balance of births over deaths, plus the balance of immigrants over emigrants as taken from returns rendered by the Railway Company, and adding these figures to the previous year's estimated population.

It is a somewhat crude method of arriving at the population, but a comparatively accurate one, in view of the smallness of the figures to be dealt with and the variations caused by fluctuations in population.

During the year 1919 there were 1,411 arrivals into Southern Rhodesia by rail over departures, and an excess of births over deaths of 384. As it is usual to calculate the population as at the middle of the year, the estimated population in the middle of 1919 would amount to 38,284 persons.

Births.—The total births registered in 1919 were 756, being a decline from 1918.

The following table gives the birth rate calculated on the estimated population for the last nine years :—

1919.	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
19.75	21.38	24.17	23.56	23.84	23.81	23.60	27.30	27.11

A birth rate of 19.75 is low comparing it with former years and taking into consideration the fact that a large proportion of the women in the country are at the child-bearing age. An attempt was made last year to explain that the falling birth rate was due to a large proportion of the young married men being absent on war service, but this factor certainly cannot apply now.

Table No. 1 in the appendix, giving the parental nationality in the last eight years, is of some interest. It will be seen that the percentage of children born of purely British parents has slightly decreased, whilst that of children born of Dutch parents on both sides has correspondingly increased.

Of the 756 births registered in 1919, 398 were males and 358 females. There were nine plural births—all twins— and twenty-eight still births. Ten illegitimate births from European mothers were registered, as compared with twenty in the previous year.

Deaths.—The year 1918 will probably be known for long as the year of the great epidemic, when the normal death rate in Southern Rhodesia was more than doubled on account of Spanish influenza, and all in the space of two or three months.

The aftermath of this epidemic is reflected in the mortality returns for 1919, where 61 deaths from epidemic influenza were registered, being 16.40 per cent. of total deaths; whilst the increased number of deaths returned as due to pneumonia may probably be attributed to the same cause.

Of the 372 deaths registered in 1919, 243 were males and 129.

females, with a crude mortality rate on the estimated population of 9.72 per thousand.

The following are the death rates per thousand of the population for the last nine years :—

1919.	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
9.72	17.6	8.45	6.97	10.46	9.58	10.74	12.68	12.20

The infantile deaths under one year of age were 63, being 16.94 of the total deaths. The percentage of total deaths for children under one year of age for the preceding three years was as follows :—

1918.	1917.	1916.
11.49	16.05	21.16

The deaths from malaria shew a marked rise, following on an increase in malaria all over the country at the end of 1918-1919. This was attributable partly to the protracted wet season, the nature of the rains, and the existence of breeding pools for mosquitoes where such pools and collections of water have been unknown for years, but also largely to the numbers of returned soldiers from German East and Central Africa infected with malaria parasites, and who proved fruitful as distributors of infection wherever they might be.

The number of deaths from blackwater was proportionately high, the probability being that the same causes were in operation here. Mortality rates from other causes do not call for comment.

Health and Sanitation on Mine Compounds.

The numbers employed in mining, both European and native, have been shrinking for the last four years, this being general to every mining district, with the exception of Victoria, where the numbers are slightly increased, and more evident in Mashonaland than in Matabeleland.

The number of employers of labour has steadily decreased in proportion during the same period.

The number of employers of labour rendering returns was as follows :—

	1916.	1917.	1918.	1919.
Mashonaland	318	270	257	267
Matabeleland	312	235	226	211
Totals	630	505	483	478
Mashonaland	19,814	18,140	14,860	11,389
Matabeleland	20,706	20,721	17,906	18,907
Totals	40,520	38,861	32,766	30,296

The number in each district was :—

Salisbury	10,201	9,129	7,406	6,712
Hartley	8,030	7,301	5,887	4,683
Gwelo	10,574	9,563	7,453	6,983
Bulawayo	10,132	11,158	10,453	10,258
Victoria	1,583	1,710	1,567	1,660
Totals	40,520	38,861	32,766	30,296

There were 597 deaths amongst native employees, giving a death rate

of 19.71 per thousand employed, being the lowest death rate recorded amongst this class since 1907. $33\frac{1}{2}$ per cent. were due to pneumonia, being a considerable reduction on previous years, where latterly it has ranged between 50 and 60 per cent., the total number of native deaths from pneumonia being 200, as compared with 509 in 1918, 321 in 1917 and 477 in 1916. This reduction both in the incidence and death rate from pneumonia is particularly striking, in face of the occurrence of more than one wave of epidemic influenza; and several of the mine medical officers have ascribed the apparent immunity this year to repeated inoculation of the native mining population with a compound influenza vaccine containing the various strains of pneumococcus isolated by Sir F. Spencer Lister, though some credit must also be allowed for the improved sanitary conditions generally, combined with a more sane and wholesome method of handling natives and providing for their wants.

One of the most important sanitary reforms on the mines has been an increase of accommodation for native employees, which is now in many instances in excess of Government requirements, and a consequent absence of complaints from Compound Inspectors as regards overcrowding; though this, I fear, cannot be ascribed to any sudden increase in altruistic ideals in mine managers so much as to the fact that the shrinkage of native labour and the numbers employed on many of the mines has left an excess of accommodation, which is better occupied than allowed to fall into ruins.

Arising out of Sir F. Spencer Lister's visit to Rhodesia (*vide* Public Health Report, 1918), arrangements were completed this year whereby, in return for a combined annual subsidy paid by the Government, the Rhodesian Native Labour Bureau, the Chambers of Mines and the Beira and Mashonaland and Rhodesia Railways, the South African Institute for Medical Research agreed to supply all vaccines free of charge, with special reference to the anti-pneumonia vaccine containing the various strains as isolated by Lister.

This issue of free vaccine to all mines has not been taken advantage of so much as it should have been, in view of the favourable results reported from those mines where inoculation of their native employees is regularly enforced.

A suggestion was made that this inoculation should be made compulsory, and it is possible this may come, but before such a course would be justified further information as to ultimate results must be available.

Influenza ranked next to pneumonia as a source of sickness and mortality on mines, in most cases the outbreaks being recurrent waves following the great epidemic of 1918, and were for the most part confined to natives from north of the Zambesi, who had come south to work on the mines, and who had previously escaped infection.

Malaria was also responsible for a certain amount of illness, but the mortality rate was low, and the work days lost were insignificant as compared with many other diseases affecting natives on mines.

Scurvy, which at one time ranked as one of the most prevalent and economically the most important of diseases attacking natives on mines, is yearly becoming of less and less importance.

Sanitation on mines generally still leaves plenty of room for improvement, but there was commendable absence of diseases which could be ascribed to insanitary conditions or overcrowding. A word of praise must here be accorded to Mr. F. M. C. Stokes, O.B.E., Compound Inspec-

tor of the Bulawayo circuit, for the ability and energy with which he has forced the use of incinerators before the notice of the mine managers of his circuit, and which are now being erected by most of the big and many of the smaller mines in the country, with the most beneficial results, both economic and hygienic.

Infectious Disease.

Typhoid Fever.—There is nothing exceptional to report, nor has there been any serious outbreak during the year. Eight deaths were reported, as compared with 10 in 1918, and there were 51 admissions to general hospitals as compared with 58 in 1918.

Smallpox.—In August, 1919, a sharp epidemic of smallpox spread across the country from east to west. It originated in Portuguese Territory, and was conveyed across the border, possibly in some instances by rail, but chiefly by wandering bands of natives entering the Territory.

There were 120 cases (16 European and 104 natives) notified between August and the end of the year, with 4 European and 30 native deaths. Outbreaks occurred in the towns of Salisbury, Umtali, Gwelo, Gatooma and in the native districts of Inyanga, Umtali, Melsetter, Salisbury, Gwelo, Hartley, Charter, Belingwe and Victoria, the majority of cases occurring in the town and district of Salisbury.

Some criticism was levelled at the Government on account of this outbreak, which it was considered in some quarters might have been prevented. The real cause of the extensive spread was that a large proportion of the young population, both white and black, were unprotected by vaccination. The systematic vaccination of the native population in the native districts, which is carried out annually by Native Commissioners, had been more or less in abeyance since the outbreak of the war, chiefly on account of shortage of officials, whilst as regards the European population, though the Health Acts in force in this Territory provide for compulsory vaccination of all children under one year of age, this has been more or less a dead letter, owing to the difficulties of enforcing it amongst a small population scattered over a wide tract of country, and the people themselves were largely to blame in neglecting to have their children vaccinated, even in centres of population where all the facilities are provided and available.

The outbreak has done good to this extent, that it has brought home to the people the necessity for vaccination, and by now practically the whole of the white population is protected, whilst the vaccination of the unvaccinated native population is being speeded up, and the systematic vaccination in the native reserves is being steadily proceeded with district by district.

The native of South Africa is peculiarly liable to smallpox, and the disease may be said to be endemic amongst them, and Rhodesia is unfortunate in this respect, that it is encircled on two sides by a foreign territory with a large native population where systematic vaccination is never and has never been enforced, thus constituting a standing menace to this country.

Apart from persons vaccinated gratuitously by municipalities and private medical men, approximately 100,000 natives were vaccinated in the various native districts throughout the Territory during the year, and this work is still proceeding.

Epidemic Influenza.—A recurrent wave of the 1918 epidemic appeared in various districts during the year, not all at the same time, and chiefly affecting that portion of the native population which were fortunate enough to escape in the great pandemic. This was specially noticeable in the Inyanga native district, which being isolated escaped almost entirely in 1918. Returning apparently from the north, this district was heavily attacked, 4,058 cases being recorded, with 411 deaths. Altogether 370 European and 6,417 natives cases were recorded.

The smallpox and influenza epidemics have emphasised the need of amended legislation giving the Public Health Department and local authorities authority to deal more effectively with sudden outbreaks of infectious disease than is possible under the Public Health Act now in force, and to issue regulations dealing with any sudden emergency which may arise.

Of the zymotic diseases incidental to childhood, outbreaks of measles, chicken-pox, scarlet fever and diphtheria have been reported from time to time, chiefly attacking school children in the larger centres. They were everywhere limited in extent, and the mortality was small.

Malaria.—There was a marked rise in the incidence of malaria attacking Europeans throughout the country, 40 European deaths being registered as due to this cause, as compared with 14 in 1916, 12 in 1917 and 17 in 1918.

There were 783 admissions to hospitals, as compared with 523 the previous year. Many were cases of recurrent malaria occurring amongst men who had returned to civil life from war service in Eastern and Central Africa and other tropical spheres of hostilities. There also can be little doubt that the influx of a large number of persons who were potential distributors of infection to others did much to increase the incidence amongst the fixed population, especially in the outside districts, where anopheles are rife and preventative measures against infection incomplete. Coupled with this, we have the fact that, owing probably to the nature of the rainy season and unusual climatic conditions, there was an apparent increase in the number of mosquitoes.

Following on the ascending curve in the malarial incidence, there was a corresponding increase in blackwater fever. There were 36 cases treated in hospitals, whilst 18 deaths were registered.

I have on more than one occasion drawn attention to the need for further research into the aetiology and prevention of this disease, and this is becoming of increased importance to Rhodesia, in view of the influx of new settlers taking up land in the remoter parts of the country. Rhodesia, moreover, is eminently suited as a base for such research. It is expected that the proposed research scholar, whose appointment has been postponed for so long on account of the war, will primarily devote his time to this, provided sufficient material for study presents itself.

Venereal Disease.—It is difficult to prove that venereal disease is actually increasing amongst the native population, but the growth of this population in and around the towns, mining compounds and other centres, and the closer contact into which they are now brought with Europeans, brings these diseases more into evidence, and the necessity for providing proper wards or hospitals for the segregation and treatment of these cases is becoming a matter of urgent importance. This especially applies to the larger towns, but up to now progress in this essential measure for the protection of the public health has been retarded by discussions as to whether the cost of erection and maintenance

of such institutions should be a charge on the Treasury or on local authorities. This has now been settled, and it is expected that this will be one of the first things to be undertaken when funds are obtainable for the carrying out of an exhaustive building programme.

Public Hospitals and Asylums.

In connection with the administration of public hospitals and asylums, the policy during the last few years has been one of trying to carry on. Many of the existing buildings require a great deal of doing up by now, whilst others have become inadequate for the requirements of the growing population, and an extensive programme comprising essential new buildings, and alterations and repairs to existing ones, has been prepared, and it is hoped that the funds required for capital expenditure will be forthcoming, and that a start will be made this year with those buildings at any rate which are of outstanding importance.

Amongst the new buildings proposed, the most important probably are wards for the isolation and segregation of cases of venereal disease amongst natives in the larger towns and centres of population, the erection of a new native hospital in Salisbury (the present building being quite inadequate for the demands made on it), wards for the segregation and treatment of tuberculosis in natives, additional accommodation for the nursing staffs, a scheme for providing houses for District Surgeons in rural districts where houses cannot be rented, additions to the bacteriological laboratory and increased accommodation for female lunatics; these being altogether separate from numerous alterations and additions which have been asked for in almost every centre, all of which it is hoped will receive attention in time.

The nursing staff having for some time felt, and with some justice, that their pay and allowances were inadequate, and this certainly had fallen below the improved standard of nurses' pay in the Transvaal and the Cape Colony, the rates of pay and allowances were accordingly completely revised this year, the following being the rates now approved :

Senior Matron.—£150 per annum, rising by £20 per annum to £210 per annum.

Matrons.—£130 per annum, rising by £10 per annum to £150 per annum.

Nurse-Matrons and Sisters.—£110 per annum, rising by £5 per annum to £120 per annum.

Qualified Nurses.—£95 per annum, rising by £5 per annum to £105 per annum.

Probationers undergoing training as nurses are paid £30 per annum during the first year of service, £35 per annum during the second year of service, and £40 per annum during any subsequent period of service.

With board, quarters and laundry.

Uniform allowance of £18 per annum is paid to all grades. Nurses are also granted concessions regarding leave, steamship passage, travelling allowances and maintenance allowance during leave.

The European admissions to general hospitals numbered 2,868, being slightly above the average, the increase being chiefly on account of malaria, the admissions of native patients remaining much as usual,

whilst the mortality rates were low as compared with former years, especially amongst natives.

The expenditure on maintenance, as apart from establishment charges, both gross and net, has shewn a marked rise in every instance, in some cases being nearly double what it was four years ago, and up to now there seems to be no prospect of any fall in prices in the near future.

Tables Nos. 13 to 28 in the appendix shew the admissions, revenue and expenditure and the average cost per head per patient for each hospital.

Ingutsheni Mental Hospital.—The report of the Acting Medical Superintendent will be found in Part II. of this report, and deals with the need of additional accommodation for European and native females. The hospital farm and garden are now extensively worked, and, apart from providing healthy and suitable accommodation and exercise for the patients, the crops produced materially reduce the net cost of maintenance.

Morgenster Leper Settlement.—The total number of lepers confined in the settlement now amounts to 60 males and 20 females.

The death rate amongst the lepers was high, chiefly on account of influenza, which swept through the settlement and claimed many victims.

Recent legislation legalising compulsory segregation of all lepers must result in a considerable increase in the numbers in the settlement in the near future, but the area set aside is ample for a long time to come, and is particularly well suited for the purpose, being well watered, well timbered and on sandy and easily worked soil.

A central hospital for the care of those who are unable to work or look after themselves, and where they can have personal care and attention, is badly required. It need not be elaborate, and there would be no restraint exercised further than was necessary for the comfort of the patients themselves, the whole policy being that within certain limits these unfortunates should be allowed to live out their lives as they would in their own kraals, with any additional assistance which may be required, such as ploughing their lands and supplying them with clothing and rationing where necessary.

Maternity Hospitals and District Nurses.—The policy of assisting maternity hospitals and district nurses with grants-in-aid from the Treasury funds has been extended.

The following hospitals and districts now receive Government grants :—

- The Hostel, Salisbury;
- The Memorial Hospital, Bulawayo;
- Dulwich Nursing Home, Gwelo;
- Victoria Maternity Home;
- Hartley Maternity Home;
- Selukwe Nursing Home;

while grants-in-aid towards providing nursing assistance for the district have been authorised, or are being paid, at the following centres :— Gatooma, Sinoia, Rusape, Inyanga and Headlands.

It is hoped hostels and nurses will gradually be provided in other districts, especially those farming areas where the population is scattered and medical assistance hard to obtain.

District Surgeons and Government Medical Officers.

The need for doctors in rural districts is very great and difficult to meet. One of the chief factors for this undoubtedly has been the shortage of medical men on account of the war, and until the requirements of the towns and centres of population are fully met it will be difficult to induce medical men to accept these posts, even at a remuneration altogether out of proportion to the work required. It can hardly be otherwise, as the lonely life, the absence of social amenities, the meagreness of the practice, coupled with the difficulty of getting paid for what is done, often after long and arduous journeys, would effectually deter most persons, especially where more attractive and lucrative posts are presenting. Even Government subsidies are of no attraction to men keen and interested in their profession in view of the life offered, with its long periods of enforced idleness, and the knowledge that their professional skill, which is after all their capital and stock-in-trade, is deteriorating on account of lack of use. In two or three instances medical men have been found to accept these appointments, but have resigned them after a brief trial, entirely on account of lack of practice and the soul-clogging effect of enforced idleness.

Encouragement is offered to medical men to combine farming with practice in certain districts, but it is difficult to find a suitable medical man, with sufficient capital for the venture, who is desirous of embarking on such a combination; and it is doubly difficult to find a farm that will just suit the inclinations and the pocket of the medical farmer, and at a reasonable distance from the centre of the district which may be in need of him.

The Administration have repeatedly been attacked for failing to meet the needs of rural districts in this respect, and my remarks shew some of the difficulties in giving effect to what after all are really the wishes of the Administration as well as of the people.

The fault lies largely with the people themselves, and their failure to recognise that this is still a pioneer country, and persons settling on the fringes of civilisation must suffer to some extent from pioneer conditions.

The cost of medical attendance to settlers who were resident at long distances from the nearest doctor received the consideration of the Government, and, following on a conference of the senior Government Medical Officers and District Surgeons, it was arranged that in return for a special grant of £100 per annum every District Surgeon in receipt of this grant should attend farmers and settlers living outside a ten mile radius from his residence at greatly reduced fees. This has been accepted by every District Surgeon in the country, with no exceptions, and would appear to be a satisfactory solution of what was undoubtedly in many instances a heavy tax.

District Surgeons, in common with other professions and trades, have felt the pinch of the increased cost of living, and lately approached the Administration with a request for a reconsideration of their status and emoluments. This is now receiving the consideration of the Government, and it is hoped to alter and improve the position of Government Medical Officers as not only to meet the demands of those already holding appointments under the Government, but also to render the Service more attractive to others.

Public Health Laboratory and Pasteur Institute.

The report of Dr. Orpen, the Pathologist, which is printed in Part II. of this report, draws attention to the need for additional laboratory staff, and a more convenient building better adapted for laboratory purposes than is available at present.

In referring to the anti-rabies work which has been continued for many years now, he points out that though six treatments for bites from rabid or supposed rabid dogs were undertaken, all the patients came from outside the Territory, one being from Nyasaland and five from Northern Rhodesia, and that no cases of rabies have been reported from Southern Rhodesia since 1913.

The microbiological examinations made during the year numbered 761, being more than double those of the previous year.

As an addendum to this report the Pathologist submitted some results of a preliminary investigation into the causes of failure with Gram's method of staining, of micro-organisms, which, however, has been omitted from the printed report, the subject being more of academic than public interest.

Prior to the commencement of the war in 1914 the Administration, in conjunction with the London School of Tropical Medicine and the Beit Trustees, had practically completed arrangements for the appointment of a research scholar and staff to carry out investigations into diseases incidental to man in these latitudes. This arrangement, however, had to be abandoned owing to the war, and it is only this year that it has been decided to continue these negotiations and to endeavour now to fill this appointment.

The appointment of a trained laboratory assistant has also received approval, and will, it is expected, be filled at an early date.

Medical Inspector of Schools.

A Medical Inspector of Schools was appointed in England in April, 1919. He did not, however, arrive till the end of November of the same year, and after a very brief stay resigned, partly for family reasons and partly because he found the work was not what he anticipated.

Negotiations are now proceeding for the appointment of a successor with more experience of school inspection and, if possible, of colonial life.

This office has now been transferred to the Department of the Director of Education, which is in accordance with the practice in the Union of South Africa and other countries.

Sale of Quinine.

The purchase in England and elsewhere of quinine by the Government, and its re-sale to the public at cost price, is a policy which has been steadily pursued and extended, with material benefit to the people, who are thus enabled to purchase what is a necessity of life to many, and at a reasonable price removed as far as possible from market fluctuations.

531,500 five-grain tablets of quinine were distributed by this Department during the year, of which 150,000 were to be sold to the public at 5s., 300,000 at 6s. and 81,500 at 5s. 6d. per 100 tablets, while 168,500 tablets of the latter consignment were on hand at the end of the year.

We have been fortunate in being able to indent quantities which enabled us to sell to the public at such reasonable prices as compared with the retail price prevailing in the country generally. The present average retail price charged by storekeepers throughout the Territory for five-grain tablets of quinine is 12s. 6d. per 100 tablets.

The importation of quinine by the Government was first introduced with a view to placing this drug within reach of farmers and settlers at cost price, but during the present year certain unprecedented sales have led to the suspicion that certain individuals were buying Government quinine for ulterior motives, and cases have been brought to light where Government quinine has been re-sold at a higher price and for use outside this Territory. This has to a certain extent been remedied by limiting the sale to 100 tablets to any one person at a time.

Under the present conditions governing the supply of quinine it will be necessary to indent for further supplies at an earlier date, and I fear at an enhanced price.

Sanitation and Public Health Administration.

The powers possessed by this Department under the existing public health laws for the control of sanitation in towns and districts are limited, and there is inadequate provision for the inspection of the areas under the control of municipalities and local authorities, nor in many instances can local authorities be forced by law to carry out necessary sanitary reforms.

In every town the removal of night soil, town refuse, garbage, kitchen sullage and other refuse is by a system of hand collection, and haulage by mule or ox-drawn sanitary carts, which collection and haulage mostly takes place at night, all refuse being dumped in areas set aside for the purpose outside the town.

This is a system which is insanitary in itself, and, moreover, necessitates constant and expensive supervision.

In Bulawayo a start has been made in a small way with incinerators for the destruction of town and location refuse, and it is hoped that this will be extended to include all the town refuse, which can be so treated, and will be adopted by other towns and villages.

Staff.

Dr. F. H. Ellis, M.C., resumed duty from war leave as Acting Assistant Medical Director at Bulawayo during Dr. W. M. Eaton's absence on leave.

Dr. F. P. Maitland, District and Hospital Surgeon, Gwelo; Mr. F. M. C. Stokes, O.B.E., Mr. E. T. Palmer, Mr. T. A. Till, Mr. R. de Vere Cornwell, Mr. F. T. Reed and Mr. K. Menzies returned to duty from active service during the year.

The following district medical appointments were made during the year :—

Dr. T. R. Hunter, District and Hospital Surgeon, Enkeldoorn.
 Dr. C. J. Lyons, District Surgeon, Enterprise.
 Dr. F. C. Sutherland, District Surgeon, Marandellas.
 Dr. J. R. Kerr, District Surgeon, Filabusi.
 Dr. A. N. Wilde, District and Hospital Surgeon, Gwanda.
 Dr. S. Gurney, Medical Officer, Mrewa.

My thanks are due to the entire staff for their loyalty and assistance in the year ended under review.

A. M. FLEMING,
 Medical Director.

PART II.

Pasteur Institute and Public Health Laboratory.

Pasteur Institute.

The health of the rabbits has remained excellent since the cement-floor hutches were built some years ago. These hutches are, however, very inconveniently situated a quarter-of-a-mile away.

The fresh virus, obtained from Paris at the beginning of the year, was carried on without difficulty, but during the hot months there is always some risk of losing the strain. A supply of cord sections is kept constantly in readiness for possible patients.

During the year six patients were treated, with no deaths; four were European and two native; one came from Nyasaland and five from Northern Rhodesia.

There have been no cases from Southern Rhodesia since 1913, which shews that it is possible to stamp out rabies in spite of great difficulties.

Since 1913 most of the cases have come from Northern Rhodesia, where rabies seems to be fairly constantly present. This is not surprising, if it be true, as I am informed, that no special measures have been taken to eradicate the disease.

Public Health Laboratory.

Work did not begin till 26th January, owing to my absence on leave; and the work was brought nearly to a standstill by the smallpox outbreak in November and December, which necessitated almost daily visits outside Salisbury.

During the above period 761 examinations were made, as compared with 339 for the preceding year (January to October).

I understand that a Research Bacteriologist has been applied for. A Laboratory Assistant is an essential if research or any advanced work is to be done, and at all times he would make it possible for more work to be done, while the laboratory could continue working during my absence.

A suitable staff would consist of a Research Bacteriologist, to initiate research where it is urgently needed; a permanent Bacteriologist to assist him, to continue the work when he leaves, and to perform all routine work, bacteriological and pathological; a Laboratory Assistant (one is sufficient for present needs); and a native laboratory boy. Such a staff would be mutually relieving and complete, and there would be no cessation of work. I think that, to have a public health laboratory in the full meaning of the term, a chemical side, with an Analyst in charge, should be added sometime, to deal with analysis of foods, etc. A certain amount of such work can be done in the present laboratory with the present staff.

The institute and laboratory have had to change their site several times at some expense, and may do so again, if the present medical offices are not a permanency. The present rooms are not specially suited to the work, and admit of no extension. The position is inconvenient, and the dust nuisance is great, with danger of contamination of cultures. A

permanent and better and more convenient site is desirable, and I would suggest that this be either in or near the Hospital grounds. The former position would allow a very necessary item, namely, steam, to be supplied, and either position would be more convenient for doctors and the delivery of specimens and reports, for the majority of specimens come from the Hospital. Personal collection of specimens would also be facilitated—this has to be left to the doctors or nurses at present.

The following is an analysis of the work done during the year :—

A.—MATERIALS DEALT WITH.

Material.	No. of Examinations.
Blood	224
Sputum	66
Pus	40
Urine	76
Stools	9
Nose and throat	30
Skin and secretions	8
Clothing, etc.	19
Water	1
Bacteria	288
Total	761

B.—METHODS EMPLOYED.

(1) *Bacteriological*—

Decomplementising	14
Animal inoculation	1
Microscopical (stained)	571
Microscopical (unstained)	18
Identification of cultures	23
Agglutination tests	34
Physical	1

(2) *Pathological*—

Microscopical (stained)	23
Microscopical (unstained)	25

(3) *Chemical*—

Urine testing	27
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(4) *Medico-legal*—

Chemical	3
Microscopical	9
Chemical and microscopical	12

Total 761

C.—ROUTINE WORK.

This work has now begun to increase, especially during the last few months. 473 examinations were made in connection with various diseases, of which the more important were as follows :—

Malaria.—71 slides were examined, with 19 positive results. The blood of patients should be examined far more frequently, malaria being assumed too often. The slides sent are usually poor and taken at the wrong time.

Trypanosomiasis.—The blood of 63 members, European and native, of Capt. Brereton's shooting party was examined, but only one positive result was found, that of the unfortunate lady who died subsequently. This would seem to indicate a chance infection, not necessarily constant in the locality. A native from elsewhere died in hospital with suspicious symptoms, but the blood proved negative both to microscopical and inoculation tests.

Filariasis.—This was found in two natives of the above party. It is probable that *filaria perstans* is fairly common among the natives, and may account for some obscure cases of swollen legs, etc. *Filaria nocturna* and *diurna* are uncommon, I believe, in this Territory, for one rarely sees cases of true elephantiasis.

Tick Fever.—*Spirochaeta Duttoni* was examined for in a few blood smears, but was not found. The disease undoubtedly exists in the Territory.

Syphilis.—Blood was taken and decompementised 14 times, but at present the actual test is done at Johannesburg, as the number of specimens sent would not justify the time involved in preparing and keeping standardised the materials required for the test. The actual test is not very satisfactory or scientific, and I hope it will be replaced by a better one, possibly chemical. A couple of tests were made with distilled water, and gave the same result as the Wassermann re-action.

Tuberculosis.—37 tests gave 9 positive results.

Enteric Fever.—Out of 34 tests, 7 positive re-actions were given. Most specimens are tested for the two paratyphoids as well, but were negative in these cases.

Bilharziasis.—8 specimens were examined, with 2 positive results. Both were Europeans.

Diphtheria.—7 cases were positive, and one suspicious. These seem to have been sporadic cases.

Dysentery.—Two cases shewed amœbæ. I think the amœbic form is not so common as the bacillary form. Stools, however, are rarely sent for diagnosis on this point.

Malta Fever.—One specimen of blood was sent away and proved positive. It is quite possible that this disease is fairly common among the natives, who drink goat's milk. It is seldom suspected, and would be assumed to be malaria usually.

L. J. J. ORPEN,
Pathologist.

Annual Report of the Medical Superintendent, Ingutsheni Asylum, 1919.

On 1st January, 1919, there were 152 patients on the register. During the year 43 were admitted, 27 were discharged recovered, 1 transferred to Valkenburg Mental Hospital, 2 handed over to the care of their relatives and 11 died. On 31st December, 1919, there remained on the register 154 patients. In residence there were 148, *i.e.*, 25 male Europeans, 100 male natives and 23 native females. One European male and five native males were absent on probation. There is accommodation for approximately 36 European males, 124 native males and 20 native females.

The daily average number under treatment was 152.52, as against 148 in the previous year. The recovery rate, calculated on the number of admissions, excluding transfers and those handed over to their relatives, was 62.79. The death-rate, calculated on the total number of patients treated, was 5.64.

Liberation on probation was allowed in 9 cases, of which three have since been discharged. The distances in some cases are so great that the expense of sending patients to their homes causes me to hesitate discharging any that may have a tendency to recur. I regard it as a most useful procedure and beneficial in every way.

An inquest was held on two patients—one, a native, who was struck by another patient; in falling, the victim fell against the brick jamb of a door and almost immediately lost consciousness. He died six hours later. *Post-mortem* revealed extensive cerebral hæmorrhage. The other was a male European in the terminal stage of general paralysis. While having lunch he managed to evade the attendant and grabbed at a handful of meat, which he bolted. Every effort was made to relieve him, but he succumbed before the obstruction could be removed. On *post-mortem* a large piece of meat was found impacted in the pharynx, completely blocking the trachea. The verdict in each case was in accordance with the medical evidence.

Mechanical restraint was not used during the year. Seclusion was used in the case of six patients on seven occasions. The reason for seclusion was either for uncontrollable violence or during attacks of epileptic excitement, chiefly to avoid struggles.

There were no escapes during the year, and this is gratifying to report, considering the extended liberty allowed the patients, the European airing court being quite open to the road, while the native patients work on the land in parties all day.

The asylum farm and garden have been a success during the year, and shew a good return in their favour. All vegetables and milk required were produced on the estate. Sufficient potatoes for our needs were also produced, and £20 from sales of potatoes was paid into revenue. The mealie crop was exceptionally good, and enough was raised to supply our requirements for nine months. I regret that the prospects are not so favourable this season, and although additional land has been put under cultivation it is doubtful if the returns will be proportionate to the amount of work done.

No major buildings were erected during the year. A store for potatoes and perishables was built by asylum labour; also a substantial

pig-sty. These additions are small, but are very useful, and provide a much-felt want.

The Public Works Department repaired the old native kitchen and added to the existing general store.

An application has been made to include a cow-shed and laundry in the Estimates for 1920-21; also extension to the general kitchen, and I trust these will receive favourable consideration. The cattle are a valuable asset, and should be properly housed. We lost several calves during the year for lack of proper housing. The laundry and kitchen needs are increasing in proportion to the population, and it is of the utmost importance that the requirements in this respect should be adequate. At present there is no laundry. This does not tend to economy, as during prolonged rains clothes have to be issued from stores for the simple reason that soiled clothes cannot be dried in sufficient quantity to meet requirements.

The accommodation for the native female patients is strained and almost overcrowded. This state of affairs causes great inconvenience, and is attended with dangers I need not go into. Should the accommodation included in the ensuing year's estimate of requirements be put in hand, the existing female wards could be used for chronic sick male natives who are objectionable to others at night, and it is desirable to have them separated from the better class of patient.

The receipts from paying patients and those supported by the Government of Northern Rhodesia, together with small sums from sale of produce, amount to £492 2s. 6d. In this connection I would call attention to the number of alien natives maintained at the asylum for whom no fees are paid. It seems to me that if careful enquiries were to be made as to where these aliens come from, and if it should be proved that they are not domiciled in this Territory, there should be no difficulty in making them chargeable to their country of origin. Of course, such enquiries would have to be made before admission to the asylum. The utmost economy consistent with efficiency is being practised, and whenever profit can be made every effort is directed to increase the revenue.

The cost of maintenance, excluding asylum produce and not including revenue from patients, amounts to 1s. 11⁵/₈d. The net cost after deducting revenue (but not deducting a gratuity of £326 1s. 1d. allowed Mr. Smith on retirement) is 1s. 8d.

It is gratifying to be able to report this satisfactory cost for maintenance, especially when increase of salaries and the general rise in the cost of commodities are considered. The cost for the previous year was 1s. 4d.

Tables shewing admissions, discharges, etc., together with a detailed table of expenditure and revenue, are attached.*

F. H. ELLIS,
Medical Superintendent.

EUROPEAN BIRTHS REGISTERED.

	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	
	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Totals Males and Females.
Father and mother British	59·84	56·56	57·77	58·42	61·54	57·08	57·53	54·63	413
Father and mother Dutch	19·39	21·65	21·12	23·85	20·03	24·56	24·33	25·80	196
Father and mother Jewish	6·05	4·05	4·25	3·95	3·93	3·27	2·40	2·10	16
Father and mother Italian	·55	·42	·80	·51	·37	·58	·38	·80	6
Father and mother Greek	·55	·42	1·20	1·02	·25	·94	·38	·93	7
Father and mother French	·14	...	·13	...	...	...	...	·13	1
Father and mother Swedish ... ..	...	...	·13	·13	·12	·23	·25	...	...
Father and mother Turkish ... ..	...	...	·13	...	...	...	...	·13	1
Father and mother Norwegian ... ..	...	...	...	...	...	·12	·12	...	...
Father and mother American	·55	·28	·27	...	·37	...	...	...	...
Father and mother Portuguese ... ..	...	...	...	·26	...	·12	...	...	...
Father and mother Roumanian ... ..	...	·42	·53	·13	·37	·12	...	·26	2
Father and mother Swiss ... ..	...	...	...	·26	...	...	...	...	...
Father and mother Egyptian ... ..	...	...	...	...	·12	...	...	...	...
Father and mother Austrian	·14	·56	·13	·26	·12	·12	...	·26	2
Father and mother German	·41	·84	·13	·13	·12	·23	·38	·13	1
Father British, mother Dutch... ..	6·88	8·94	7·57	5·87	6·63	6·78	6·72	8·33	63
Father British, mother French	·14	...	·40	·38	...	...	·12	·26	2
Father British, mother Swiss	·14	...	·13	...	...	...	...	...	...
Father British, mother Japanese ... ..	...	...	...	·13	...	...	...	...	...
Father British, mother Norwegian ... ..	...	...	...	...	...	...	...	·26	2
Father British, mother Russian ... ..	...	...	·13	...	...	·23	...	·13	1
Father British, mother Danish ... ..	...	...	...	·13	·12	...	...	...	...
Father British, mother Swedish ... ..	...	...	·13	·26	·12	...	...	...	...
Father British, mother American ... ..	...	...	...	·26	·37	·12	...	...	...
Father British, mother German	·55	·28	·66	·51	·49	·47	·88	·53	4
Father Dutch, mother British	·69	1·26	·53	1·02	1·23	1·28	2·15	1·85	14
Father Dutch, mother Portuguese ... ..	...	...	...	·13	...	...	...	...	...
Father Jewish, mother British ... ..	...	·14	·13	·26	·25	·23	·12	·13	1
Father Jewish, mother Dutch ... ..	...	...	...	·38	·12	...	·12	...	...
Father Italian, mother British... ..	...	...	·13	...	·12	...	...	...	...
Father Italian, mother Dutch ... ..	...	·14	·13	·13	·12	...	...	·13	1
Father Italian, mother Egyptian ... ..	...	...	...	...	·12	...	·12	...	...
Father Italian, mother Russian ... ..	...	...	...	...	...	·12	...	...	...
Father Greek, mother British	·14	...	·13	...	...	...	...	...	...
Father Greek, mother Dutch ... ..	...	...	...	...	·25	·23	...	·13	1
Father Greek, mother Roumanian ... ..	...	...	...	...	...	·12	·12	...	...
Father Greek, mother Egyptian ... ..	...	...	...	...	·12	...	...	·13	1
Father French, mother British ... ..	...	·14	·13	...	...	...	...	·26	2
Father Danish, mother British ... ..	...	...	...	...	...	·12	...	·13	1
Father Swiss, mother Dutch ... ..	...	...	·13	...	...	...	...	...	...
Father Swiss, mother German... ..	...	...	·13	...	...	·12	...	...	...
Father Russian, mother British ... ..	...	...	...	...	·25	·12	·12	...	...
Father Russian, mother Dutch ... ..	...	...	...	...	·12	...	...	...	...
Father Russian, mother Austrian ... ..	...	...	...	...	...	·12	...	·13	1
Father Russian, mother German ... ..	...	...	·13	...	·25	·12	...	...	...
Father Russian, mother Spanish ... ..	...	...	...	...	...	...	...	·13	1
Father Norwegian, mother British ... ..	...	...	...	...	...	...	·12	...	...
Father Swedish, mother British ... ..	...	...	·13	...	·12	...	·12	...	...
Father Swedish, mother Dutch ... ..	...	·28	·13	...	·12	·35	...	...	...
Father American, mother British ... ..	...	...	...	·38	·49	·23	·12	...	...
Father American, mother Dutch	·28	·14	·13	...	...	·23	...	...	...
Father American, mother Greek ... ..	...	...	...	...	·12	...	...	...	...
Father Austrian, mother British ... ..	...	...	·13	...	·12	...	·12	...	...
Father Austrian, mother Russian ... ..	...	...	·27	...	...	·12	·12	...	...
Father German, mother British	·28	...	·13	·13	·25	·23	·38	·53	4
Father German, mother Dutch	·96	...	·66	·38	·37	·12	·25	·13	1
Father German, mother Jewish ... ..	...	...	·13	·13	...	·12	...	...	...
Father German, mother Swiss... ..	...	·14	·13	...	...	...	...	...	...
Father German, mother Russian ... ..	...	...	·13	...	...	...	...	...	...
Father Bulgarian, mother Russian ... ..	...	...	·27	...	...	...	...	...	...
Father Roumanian, mother Jewish ... ..	...	...	...	...	...	...	...	...	...
Father Roumanian, mother Russian ... ..	...	...	...	...	...	...	...	·13	1
Illegitimate — mother of European parentage, paternal parentage un- known ... ..	...	·84	·53	·51	·49	1·29	2·15	1·32	10
Total births	727	716	753	784	815	855	789	...	756

EUROPEAN BIRTHS, 1919

District.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
Salisbury	23	16	15	24	16	16	14	12	17	15	7	21	196
Bulawayo	18	20	17	29	13	13	19	12	26	17	27	20	238
Umtali	7	7	8	6	7	7	5	9	5	8	7	7	83
Hartley	1	2	3	...	...	...	...	1	1	...	2	...	10
Gwelo	4	6	4	2	...	2	5	...	7	6	6	8	57
Gwanda	...	...	...	...	...	...	...	...	1	...	...	1	2
Gatooma	4	...	1	3	1	1	3	5	6	3	4	3	35
Charter	3	8	3	5	4	4	5	7	1	2	9	2	53
Que Que	...	...	3	2	2	...	...	1	1	...	1	2	12
Victoria	6	2	2	1	1	1	2	...	2	3	3	1	24
Melsetter	3	2	4	1	1	4	4	5	2	4	1	2	33
Selukwe	1	1	1	1	1	2	2	...	3	...	1	...	13
Totals	70	64	61	74	61	50	59	52	72	58	68	67	756
1918	58	56	49	74	82	72	67	66	64	72	75	53	789
1917	69	63	78	69	69	71	76	80	71	82	71	56	855
1916	63	56	74	68	68	70	80	62	66	67	75	66	815

EUROPEAN DEATHS, 1919.

District.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
Salisbury	9	5	6	11	16	10	8	1	8	14	5	6	99
Bulawayo	11	26	15	7	11	10	12	11	5	9	9	5	131
Umtali	5	1	5	7	7	3	4	1	5	1	1	...	40
Hartley	...	1	1	...	...	...	...	...	...	...	...	...	2
Gwelo	3	...	6	1	4	1	1	2	...	2	4	1	25
Gwanda	...	1	...	...	...	...	...	...	4	...	...	...	5
Gatooma	2	1	...	1	...	...	2	...	1	1	...	1	9
Charter	...	2	2	1	1	1	...	1	...	1	1	...	10
Que Que	1	...	...	...	1	...	1	1	1	...	...	2	7
Victoria	3	3	2	2	7	3	1	2	...	4	...	...	27
Melsetter	...	...	...	...	2	1	5	1	1	...	...	...	10
Selukwe	1	...	...	2	1	...	...	...	2	...	1	...	7
Totals	35	40	37	32	50	29	34	20	27	32	21	15	372
1918	18	16	22	28	34	24	34	21	16	124	234	82	653
1917	28	17	21	30	27	24	19	27	19	33	17	37	299
1916	23	30	27	13	22	23	27	18	15	20	10	13	241

EUROPEAN DEATHS, 1916—1919.

1916.

Age periods.	0-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65-75	75-85 and over	Age unknown	Totals
Males	26	19	4	13	14	33	38	12	6	2	1	168
Females	25	10	6	5	5	7	4	6	4	1	...	73
Totals	51	29	10	18	19	40	42	18	10	3	1	241

1917.

Males	24	12	8	11	16	31	37	15	20	7	5	186
Females	24	25	12	4	15	10	9	5	5	4	...	113
Totals	48	37	20	15	31	41	46	20	25	11	5	399

1918.

Males	42	34	15	29	115	102	50	20	8	3	9	427
Females	33	27	17	25	45	25	30	15	6	1	2	226
Totals	75	61	32	54	160	127	80	35	14	4	11	653

1919.

Males	39	21	16	13	21	52	35	26	11	5	4	243
Females	24	17	7	6	25	23	6	8	3	8	2	129
Totals	63	38	23	19	46	75	41	34	14	13	6	372

The following table is a comparative statement of the mortality amongst natives employed on mines in Southern Rhodesia from January to December, 1919, with mortality rates for the preceding twelve years for comparison :—

Month.	Average No. of natives employed.	No. of deaths from disease.	Death rate per 1,000 per mensem from disease.	No. of deaths from accident.	Death rate per 1,000 per mensem from accident.	Total No. of deaths.	Death rate per 1,000 per mensem from all causes.
January ...	23,981	68*	2·84	7	·29	75	3·13
February ...	27,584	11	·40	7	·25	18	·65
March ...	28,525	27	·95	5	·18	32	1·12
April ...	29,785	22	·74	8	·27	30	1·01
May ...	30,792	23	·75	5	·16	28	·91
June ...	31,286	29	·93	13	·42	42	1·34
July ...	31,001	28	·90	9	·29	37	1·19
August ...	32,380	43	1·33	6	·19	49	1·51
September ...	32,223	79	2·45	5	·16	84	2·61
October ...	32,093	59	1·84	8	·25	67	2·09
November ...	31,567	60	1·90	9	·29	69	2·19
December ...	32,333	58	1·79	8	·25	66	2·04

* Seventeen deaths from pneumonia and ten from influenza actually occurred in 1918, but were not reported until this year, and were included in the returns for the first quarter of 1919, according to the customary rule.

Totals and Averages.

Year.			Per annum.		Per annum.		Per annum.
1919 ...	30,296	507	16·73	90	2·97	597	19·71
1918 ...	32,766	3,629	110·76	88	2·69	3,717	113·44
1917 ...	38,861	700	18·01	149	3·83	849	21·85
1916 ...	40,520	911	22·48	172	4·24	1,083	26·73
1915 ...	37,928	832	21·94	159	4·19	991	26·13
1914 ...	36,100	897	24·85	135	3·74	1,032	28·59
1913 ...	33,543	783	23·49	158	4·71	946	28·20
1912 ...	34,494	1,073	31·11	163	4·73	1,236	35·83
1911 ...	37,909	1,085	28·62	164	4·33	1,249	32·95
1910 ...	37,826	1,682	44·74	182	4·81	1,864	49·28
1909 ...	32,721	1,383	42·27	161	4·92	1,544	47·19
1908 ...	30,865	1,397	45·26	132	4·28	1,529	49·54
1907 ...	26,098	1,486	56·94	102	3·91	1,588	60·85

The comparative mortality-from-disease rates amongst the different tribes for the past years are as follows :—

Natives of	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Southern Rhodesia ...	10·27	11·25	10·05	12·61	12·03	91·28	11·60
Portuguese East Africa ...	17·27	19·62	18·46	19·94	16·50	89·31	12·59
Northern Rhodesia ...	42·48	39·01	21·15	25·22	21·37	124·79	23·32
Nyasaland ...	28·88	32·66	39·92	36·15	25·76	145·85	20·12
Other sources ...	17·88	15·35	24·26	10·46	10·54	83·24	9·08

The following table shews the mortality amongst native mine labourers in Southern Rhodesia during the years 1916 to 1919, grouped according to Territory:—

Territorial classification.				Deaths.																								
Territories.	Average employed.				Pneumonia.				Scurvy.				Influenza.				Other diseases.				Accident.				Totals.			
	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.				
Southern Rhodesia ...	13,090	14,052	11,251	10,348	93	78	159	60	7	5	3	1	...	...	802	22	65	86	63	37	46	49	24	31	211	218	1,051	151
Portuguese East Africa	8,026	7,094	6,024	5,562	78	56	95	18	9	2	1	1	...	...	408	18	73	59	34	33	27	20	18	12	187	137	556	82
Northern Rhodesia ...	7,494	7,440	6,619	6,219	104	71	79	39	15	12	5	1	...	...	671	49	70	76	71	56	34	36	21	17	223	195	847	162
Nyasaland ...	10,513	9,434	7,953	8,199	197	113	168	80	18	9	3	...	...	...	917	18	165	121	72	67	61	35	23	30	441	278	1,183	195
Other sources ...	1,626	1,138	937	771	5	3	8	3	...	...	1	1	...	...	53	1	12	9	16	2	4	9	2	...	21	21	80	7
Totals ...	40,749	39,158	32,784	31,099	477	321	509	200	49	28	13	4	...	...	2,851	168	385	351	256	195	172	149	88	90	1,083	849	3,717	597

22

Death rate per mille per annum.

Disease.				Accident.				All causes.			
1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.
12·61	12·03	91·28	11·60	3·51	3·49	2·13	3·00	16·12	15·52	93·41	14·59
19·94	16·50	89·31	12·59	3·36	2·82	2·99	2·16	23·30	19·32	92·30	14·74
25·22	21·37	124·79	23·32	4·54	4·84	3·17	2·73	29·76	26·21	127·96	26·05
36·15	25·76	145·85	20·12	5·80	3·71	2·89	3·66	41·95	29·47	148·75	23·78
10·46	10·54	83·24	9·08	2·46	7·91	2·13	...	12·92	18·46	85·38	9·08
22·36	17·88	110·69	16·30	4·22	3·81	2·68	2·89	26·58	21·68	113·38	19·20

The following table shews the number of cases of sickness, number of deaths, death rate per cent., sickness incidence per thousand per annum and death rate per thousand per annum amongst natives employed on mines in Southern Rhodesia for the years 1916, 1917, 1918 and 1919 :—

NAME OF DISEASE.		Number employed				1916				1917				1918				1919				1919			
		...				40,520				38,861				32,766				30,296							
		Total sick.				Total deaths.				Case mortality per cent.				Sickness incidence rate per mille per annum employed.				Death rate per mille per annum employed.							
		1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919				
Malaria	...	6,693	5,719	5,164	6,074	37	29	32	31	55	51	60	51	165.18	147.17	157.60	200.49	91	75	98	102				
Scurvy	...	1,033	727	206	116	49	28	13	4	4.74	3.95	6.31	3.45	25.49	18.77	6.29	3.83	1.21	72	40	13				
Syphilis	...	86	119	103	119	8	10	7	9	9.30	8.40	6.80	7.56	2.12	3.06	3.14	3.93	20	26	21	30				
Pneumonia	...	2,808	2,133	1,750	991	477	321	509	200	16.99	15.0	29.09	20.18	69.30	54.89	53.41	32.71	11.77	8.26	15.53	6.60				
Phthisis	...	208	308	81	93	77	66	33	20	37.02	21.41	40.74	21.51	5.13	7.93	2.47	3.07	1.90	1.70	1.01	66				
Other Diseases of the Chest	...	4,397	4,248	3,736	3,238	37	21	21	22	84	49	56	68	116.95	109.31	114.02	106.88	91	54	64	73				
Dysentery	...	733	606	256	262	44	41	28	9	6.00	6.77	10.94	3.44	18.09	15.59	7.81	8.65	1.09	1.06	85	30				
Diarrhoea	...	1,002	1,078	742	556	7	1	5	1	70	93	67	18	24.73	27.74	22.65	18.35	17	03	15	03				
Other Intestinal Diseases	...	401	381	226	241	18	19	17	14	4.49	4.98	7.52	5.81	9.90	9.80	6.90	7.95	44	49	52	46				
Heart Disease	...	53	57	43	37	31	26	16	14	58.49	45.61	37.21	37.84	1.31	1.47	1.31	1.22	77	67	49	46				
Debility	...	268	323	545	588	6	4	14	7	2.24	1.24	2.57	1.19	6.61	8.31	16.63	19.41	15	13	43	23				
Other Diseases	...	8,041	8,156	8,662	4,763	120	134	83	68	1.49	1.64	96	1.43	198.45	209.88	264.36	157.22	2.96	3.45	2.53	2.24				
Minor Ailments	...	...	...	...	2,404	...	...	...	...	...	...	...	...	...	...	...	79.35	...	...	...	...
Accident	...	6,401	6,308	6,077	6,226	172	149	88	90	2.69	2.36	1.45	1.45	157.97	162.32	185.47	205.52	4.25	3.83	2.69	2.97				
Influenza	...	...	...	19,471	2,146	...	...	2,851	108	...	...	14.64	5.03	...	...	594.24	70.83	...	...	87.01	3.56
Totals	...	32,124	30,163	47,062	27,854	1,083	849	3,717	597	3.37	2.81	7.90	2.14	792.79	776.18	1,436.31	919.40	26.73	21.85	113.44	19.71				

Table shewing the death rate in various groups according to the number of natives employed :—

	Average No. employed.				No. of deaths from disease.				Death rate per mille per annum employed.			
	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.
Group 1.—Mines employing over 1,000 natives ...	11,202	11,794	11,388	9,741	366	286	1,395	186	32·67	24·25	122·50	19·09
Group 2.—Mines employing over 500 and under 1,000 natives ...	7,246	3,017	1,603	2,177	161	62	239	25	22·22	20·55	149·10	11·48
Group 3.—Mines employing over 300 and under 500 natives ...	1,681	3,557	3,572	3,212	39	65	473	47	23·20	18·27	132·42	14·63
Group 4.—Mines employing under 300 natives ...	20,391	20,493	16,203	15,166	345	287	1,522	249	16·91	14·05	93·93	16·42

The distribution of labour amongst these employers was as follows :—

1916.	1917.	1918.	1919.	
4	4	4	4	properties employing 1,500 natives and over.
3	3	3	2	„ „ 1,000 „ under 1,500.
11	5	3	5	„ „ 500 „ „ 1,000.
...	5	6	3	„ „ 400 „ „ 500.
5	4	3	4	„ „ 300 „ „ 400.
16	19	10	14	„ „ 200 „ „ 300.
54	39	39	34	„ „ 100 „ „ 200.
54	54	50	43	„ „ 50 „ „ 100.
70	37	59	54	„ „ 25 „ „ 50.
412	335	306	315	„ „ under 25 natives.

EARNINGS FROM PAYING PATIENTS.

Hospitals.	1916.	1917.	1918.	1919.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Salisbury ...	3,076 18 0	4,533 5 0	6,015 1 2	6,213 12 0
Umtali ...	1,081 9 1	1,192 14 8	1,443 2 11	1,455 11 3
Gwelo ...	923 10 2	1,318 2 4	1,190 19 5	997 14 2
Victoria ...	314 1 2	317 18 7	460 15 2	296 6 6
Hartley ...	767 3 6	764 9 5	206 7 8	Hartley Hospital closed 30-6-18. 153 8 2
Gwanda ...	165 5 6	133 15 6	136 18 3	
Enkeldoorn ...	84 7 0	45 2 2	91 11 10	85 5 6
Gatooma ...	530 15 3	549 0 0	1,038 13 9	1,381 0 5
Shamva ...	281 7 6	270 13 6	515 6 0	416 14 3
Sinoia ...	270 4 5	260 0 5	313 13 11	260 15 8
Belingwe ...	272 15 6	367 7 0	510 11 4	128 16 0
Mazoe ...	34 0 6*	Closed.	...	...
Totals ...	7,801 17 7	9,752 8 7	11,923 1 5	11,389 3 11

* For eight months only.

Table shewing the number of beds in each Government hospital and the Ingutsheni Asylum, the daily average of patients treated, and the revenue and expenditure of each.

Name of hospital.	Beds.						Daily average of patients treated.																
	1916.		1917.		1918.		1919.		1916.		1917.		1918.		1919.								
	White.	Native.	White.	Native.	White.	Native.	White.	Native.	White.	Native.	White.	Native.	White.	Native.	White.	Native.							
Salisbury	56	45	56	45	56	45	56	45	27.00	18.00	30.5	20.07	37.06	42.7	39.1	35.4							
Umtali	30	16	30	16	30	16	30	16	6.51	4.05	7.9	4.9	9.05	5	9.4	5.8							
Gwelo	28	37	28	34	28	34	28	34	4.67	16.46	5.6	25.32	7.13	14.88	7.04	17.27							
Victoria	12	5	12	11	12	11	12	13	1.50	4.28	1.52	5.08	2.8	7.2	2.25	8.63							
Hartley*	16	64	16	64	15	60	15	60	3	37.27	3.25	31.15	3.38	26.42	...	...					
Gwanda	8	12	12	13	8	12	9	22	1.45	4.57	.77	4.79	.20	6	...	.43					
Enkeldoorn	4	4	4	4	5	4	5	4	.44	...	...	1.3	.004	...	.08	.06			
Gatooma	3	47	3	47	19	60	19	60	...	26.8	...	32.7	5.13	39.36	3.88	39.37							
Shamva	10	...	10	...	10	...	14	...	3	...	3	...	4	...	4	...							
Sinoia	10	6	10	6	10	6	11	6	1.29	7.3	2.20	2.32	1.2	4.1	1.25	4.7							
Mazoe†	10	...	...	...	...	...	...	...	.27	...	...	...	...	...	...	.68
Belingwe	8	18	...	12	12	12	9	15	.3	3.16	.38	5.26	.6	3.3	.09	...							
Ingutsheni Asylum ...	30	126	42	154	42	149	36	144	16	96	18	103	24	124	27	127.61							
Gross expenditure.								Revenue.								Net expenditure.							
1916.	1917.		1918.		1919.		1916.		1917.		1918.		1919.		1916.		1917.		1918.		1919.		
£ s. d.	£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		
8,748 3 1	10,237 19 4	13,494 10 2	16,432 12 11	2,637 13 0	3,748 2 8	4,167 0 6	5,630 1 8	6,110 10 1	6,489 16 8	9,327 9 8	10,802 11 3	10,802 11 3	10,802 11 3	9,327 9 8	10,802 11 3	10,802 11 3	10,802 11 3	9,327 9 8	10,802 11 3	10,802 11 3	10,802 11 3		
2,585 2 7	2,533 5 8	2,355 18 7	3,497 13 8	1,607 13 7	1,248 0 8	1,305 3 1	1,394 12 3	1,567 9 0	1,285 5 0	1,050 15 6	2,103 1 5	2,103 1 5	2,103 1 5	1,050 15 6	2,103 1 5	2,103 1 5	2,103 1 5	1,050 15 6	2,103 1 5	2,103 1 5	2,103 1 5		
3,168 8 5	4,171 5 3	3,000 14 8	3,841 14 6	607 11 11	1,198 13 11	927 5 10	1,144 0 1	2,560 16 6	2,972 11 4	2,073 8 10	2,697 14 5	2,697 14 5	2,697 14 5	2,073 8 10	2,697 14 5	2,697 14 5	2,697 14 5	2,073 8 10	2,697 14 5	2,697 14 5	2,697 14 5		
1,845 3 6	1,549 2 6	1,614 15 3	2,055 19 0	271 3 11	297 4 3	198 13 2	422 7 5	1,573 19 7	1,251 18 3	1,416 2 1	1,633 11 7	1,633 11 7	1,633 11 7	1,416 2 1	1,633 11 7	1,633 11 7	1,633 11 7	1,416 2 1	1,633 11 7	1,633 11 7	1,633 11 7		
2,658 11 11	2,295 0 3	1,458 11 0	...	759 19 0	713 15 8	226 15 10	...	1,898 12 11	1,581 4 7	1,231 15 2	1,231 15 2	1,231 15 2		
1,025 16 9	924 8 0	731 4 6	746 9 2	171 4 5	124 15 3	156 13 8	164 16 10	854 12 4	799 12 9	574 10 10	581 12 4	581 12 4	581 12 4	574 10 10	581 12 4	581 12 4	581 12 4	574 10 10	581 12 4	581 12 4	581 12 4		
638 16 7	475 18 4	449 2 11	459 5 9	74 9 1	43 0 10	45 15 2	83 16 9	564 7 6	432 17 6	403 7 9	375 9 0	375 9 0	375 9 0	403 7 9	375 9 0	375 9 0	375 9 0	403 7 9	375 9 0	375 9 0	375 9 0		
1,480 0 7	1,356 0 9	2,227 17 2	3,744 12 9	490 17 11	562 4 5	656 1 3	1,302 16 10	989 2 8	793 16 4	1,571 15 11	2,441 15 11	2,441 15 11	2,441 15 11	1,571 15 11	2,441 15 11	2,441 15 11	2,441 15 11	1,571 15 11	2,441 15 11	2,441 15 11	2,441 15 11		
814 3 8	867 14 9	1,037 4 9	1,721 11 10	356 7 8	218 7 6	265 14 3	539 16 6	457 16 0	649 7 3	771 10 6	1,181 15 4	1,181 15 4	1,181 15 4	771 10 6	1,181 15 4	1,181 15 4	1,181 15 4	771 10 6	1,181 15 4	1,181 15 4	1,181 15 4		
869 5 6	884 11 8	854 7 7	1,161 0 8	190 17 10	131 14 8	275 8 6	260 3 11	678 7 8	752 17 0	578 19 1	900 16 9	900 16 9	900 16 9	578 19 1	900 16 9	900 16 9	900 16 9	578 19 1	900 16 9	900 16 9	900 16 9		
363 10 10	29 15 0	333 15 10		
591 6 7	760 6 6	681 6 9	578 17 1	243 12 11	401 7 10	462 0 3	243 10 8	347 13 8	358 18 8	219 6 6	335 6 5	335 6 5	335 6 5	219 6 6	335 6 5	335 6 5	335 6 5	219 6 6	335 6 5	335 6 5	335 6 5		
3,181 2 4	4,038 10 8	4,191 17 11	5,526 16 0	225 9 11	165 0 6	301 11 11	492 2 6	2,955 12 5	3,873 10 2	3,890 6 0	5,034 13 6	5,034 13 6	5,034 13 6	3,890 6 0	5,034 13 6	5,034 13 6	5,034 13 6	3,890 6 0	5,034 13 6	5,034 13 6	5,034 13 6		

* Hartley Hospital closed 30-6-18.

† For eight months only.

Table giving the average cost per head at the several Government Hospitals and Ingutsheni Asylum.

NAME OF HOSPITAL.	In-patients, European and Native.				Days treated, patients.				Days maintained, staff.				Total days maintained, staff and patients.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Salisbury	1,230	1,593	1,734	1,692	16,464	21,809	29,156	27,182	22,081	21,154	23,193	27,740	38,545	42,963	52,349	54,922
Umtali	301	380	450	495	3,868	4,700	5,133	5,565	6,222	6,052	5,910	5,502	10,090	10,752	11,043	11,067
Gwelo...	338	408	460	402	7,716	11,301	8,024	8,878	6,100	6,961	6,737	6,602	13,816	18,262	14,761	15,480
Victoria	120	127	115	166	2,121	2,413	3,663	3,972	4,669	4,849	4,638	4,614	6,790	7,262	8,301	8,586
Hartley*	385	326	152	...	14,741	12,561	5,394	...	5,998	5,979	2,884	...	20,739	18,540	8,278	...
Gwanda	92	96	148	193	2,204	2,029	2,279	1,480	2,897	2,445	1,951	1,825	5,101	4,474	4,230	3,305
Enkeldoorn	30	55	51	35	575	544	520	523	1,460	1,460	1,359	1,135	2,035	2,004	1,879	1,658
Gatooma	340	399	423	491	9,813	11,944	15,465	15,791	3,428	3,619	5,230	6,649	13,241	15,563	20,695	22,440
Shamva	120	75	126	177	1,160	907	1,682	1,499	2,550	2,690	2,980	3,855	3,710	3,597	4,662	5,354
Sinoia...	139	148	159	165	2,952	1,808	2,204	2,084	2,605	2,735	2,754	2,835	5,557	4,543	4,958	4,919
Mazoe...	7	...	...	...	66	...	...	...	1,196	...	...	...	1,262	...	...	...
Belingwe	73	76	84	28	1,306	2,187	1,446	453	1,095	1,095	1,095	1,095	2,401	3,282	2,541	1,548
Ingutsheni Asylum ...	147	162	194	195	40,792	44,147	53,967	55,672	5,721	7,090	7,363	7,652	46,513	51,237	61,330	63,324

Cost per caput per diem, worked out on gross expenditure.				Deficit of revenue over expenditure.				Approximate charge on public funds for each patient treated in hospital during 1916, 1917, 1918 and 1919.			
1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
s. d.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
4 6	4 9	5 2	5 11	6,489 16 8	9,327 9 8	10,802 11 3	10,802 11 3	4 19 4	4 1 6	5 7 7	6 7 8
5 1	4 9	4 3	6 3	1,585 5 0	1,050 15 6	2,103 1 5	2,103 1 5	5 4 1	3 7 8	2 6 8	4 4 11
4 7	4 7	4 1	4 11	2,972 11 4	2,073 8 10	2,694 14 5	2,694 14 5	7 11 6	7 5 9	4 10 2	6 14 2
5 5	4 3	3 11	4 9	1,251 18 3	1,416 2 1	1,633 11 7	1,633 11 7	13 2 4	9 17 2	12 6 3	9 16 9
2 7	2 6	3 6	...	1,581 4 7	1,231 15 2	...	...	4 18 8	4 17 0	8 2 1	...
4 0	4 2	3 5	4 6	799 12 9	574 10 10	581 12 4	581 12 4	9 5 9	8 6 7	3 17 8	3 0 3
6 3	4 9	4 9	5 6	432 17 6	403 7 9	375 12 9	375 12 9	18 16 3	7 17 5	7 18 2	10 14 7
2 3	1 9	2 2	3 4	793 16 4	1,571 15 11	2,441 15 11	2,441 15 11	2 18 2	1 19 9	3 14 4	4 19 5
4 5	4 10	4 5	6 5	649 7 3	771 10 6	1,181 15 4	1,181 15 4	3 16 4	8 13 2	6 2 6	6 13 6
3 2	3 11	3 5	4 8	752 17 0	578 19 1	900 16 9	900 16 9	4 17 7	5 1 9	3 12 10	5 9 2
5 9	...	...	...	...	...	...	...	47 13 8	...	...	...
4 11	4 8	5 4	7 5	358 18 8	219 6 6	335 6 5	335 6 5	4 15 3	4 14 5	2 12 3	11 19 6
1 4	1 7	1 4	1 8	3,873 10 2	3,890 6 0	5,034 13 6	5,034 13 6	20 2 2	23 18 3	20 1 1	25 16 4

* Hartley Hospital closed 30-6-18.

RETURN OF GOVERNMENT AND PAUPER PATIENTS TREATED IN GOVERNMENT HOSPITALS

DURING 1916, 1917, 1918 and 1919.

NAME OF HOSPITAL.	Number of free patients.				Total number of units treated.				Cost of hospital votes of treatment, maintenance, etc., worked out on gross expenditure basis.				Loss of revenue represented.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Salisbury...	331	340	413	451	6,802	6,827	10,072	9,309	£ s. d. 1,530 9 0	£ s. d. 1,621 8 3	£ s. d. 2,601 18 8	£ s. d. 2,753 18 3	£ s. d. 2,310 1 0	£ s. d. 1,133 10 0	£ s. d. 1,571 15 0	£ s. d. 1,503 12 6
Umtali ...	66	84	91	100	1,269	1,758	1,416	1,773	322 10 9	417 10 6	300 18 0	554 1 3	192 2 6	282 12 6	224 15 0	289 17 6
Gwelo ...	102	155	172	162	3,795	5,172	3,680	4,985	869 13 9	1,185 5 0	751 6 8	1,125 9 7	554 0 0	759 8 10	604 3 11	765 12 10
Victoria ...	61	63	56	96	1,223	1,426	2,123	2,709	331 4 7	303 0 6	415 15 1	643 7 9	166 17 6	191 5 0	302 2 6	387 5 0
Hartley* ...	203	193	84	...	10,108	9,472	4,543	...	1,305 12 4	1,184 0 0	795 0 6	...	1,349 17 6	1,255 17 6	612 5 0	...
Gwanda ...	57	65	72	92	1,448	1,205	1,421	921	289 12 0	251 0 10	242 15 1	207 4 6	220 7 6	172 12 6	442 5 0	119 5 0
Enkeldoorn ...	12	33	20	17	184	302	179	261	57 10 0	71 14 6	42 10 3	71 15 6	23 7 6	40 7 6	29 2 6	38 12 6
Gatooma ...	101	162	167	214	5,716	7,650	10,237	10,766	643 1 0	669 7 6	1,109 0 2	1,794 6 8	714 10 0	956 5 2	1,289 7 6	958 13 3
Shamva ...	12	5	11	14	172	55	84	189	37 19 8	13 5 10	18 11 0	51 3 9	144 0 0	13 15 0	21 0 10	47 2 6
Sinoia ...	109	46	56	67	1,392	813	1,032	1,178	220 8 0	159 4 3	176 6 0	98 3 4	185 11 9	120 5 5	145 19 4	161 3 2
Belingwe...	33	25	35	10	326	1,174	562	172	80 2 10	273 18 8	149 17 4	10 7 8	46 10 0	149 10 0	70 17 6	23 0 0
Totals ...	1,087	1,171	1,177	1,223	32,435	35,854	35,349	32,263	5,688 3 11	6,149 15 10	6,603 18 11	7,409 18 3	5,907 5 3	5,075 9 5	5,313 13 3	4,294 4 3

* Hartley Hospital closed 30.6.18.

Cases, with mortality rate per cent., admitted to hospitals in 1919, as compared with 1918, 1917 and 1916.

			1916.			1917.			1918.			1919.		
			Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	...	White	701	30	4.28	897	36	4.01	976	41	4.20	977	27	2.76
		Native	493	44	8.92	655	53	8.09	688	77	11.19	631	45	7.13
Umtali	...	White	228	10	4.39	277	11	3.97	338	15	4.44	370	9	2.43
		Native	63	13	20.63	90	17	18.89	106	17	16.08	113	15	13.27
Gwelo	...	White	108	1	0.93	107	10	9.35	227	16	7.05	158	8	5.06
		Native	230	36	15.65	270	42	15.56	219	31	14.16	223	29	13.00
Victoria	...	White	50	5	10.00	56	3	5.36	55	3	5.45	77	9	11.69
		Native	70	8	11.43	71	14	19.72	56	15	26.79	89	9	10.11
Hartley*	...	White	73	1	1.37	69	3	4.35	33	...	...	...	...	...
		Native	272	32	11.76	203	32	15.76	107	11	10.26	...	...	...
Gwanda	...	White	26	...	...	26	...	...	15	...	...	31	...	...
		Native	64	8	12.50	75	9	12.00	125	8	6.40	159	3	1.89
Enkeldoorn	...	White	11	1	9.09	12	...	...	18	...	...	10	...	...
		Native	20	1	5.00	43	4	9.30	30	2	6.67	25	...	...
Gatooma†	...	White	...	...	...	...	...	...	98	8	8.16	174	4	2.30
		Native	302	63	20.86	361	54	14.96	385	56	19.65	266	36	13.53
Bulawayo	...	White	690	21	3.04	767	48	6.26	836	61	7.30	802	39	4.86
		Native	544	69	12.68	638	74	11.60	609	80	13.14	730	91	12.47
Shamva	...	White	120	5	4.17	75	4	5.33	124	8	6.45	176	3	1.70
Sinoia	...	White	47	1	2.13	91	4	4.40	66	5	7.58	90	4	4.44
		Native	90	13	14.44	54	6	11.11	85	7	8.24	69	3	4.35
Mazoe‡	...	White	7	...	...	...	...	...	...	...	...	...	...	...
Belingwe	...	White	12	1	8.33	7	...	...	19	2	10.53	3	1	33.33
		Native	56	7	12.50	58	11	18.97	54	11	20.37	25	1	4.00
Totals	...	White	2,073	76	3.67	2,384	119	4.99	2,805	159	5.67	2,868	104	3.63
		Native	2,204	294	13.34	2,518	316	12.55	2,364	315	13.32	2,330	232	10.00

Cases, with mortality rate per cent., of malarial fever admitted to hospitals in 1919, as compared with 1918, 1917 and 1916.

			1916.			1917.			1918.			1919.		
			Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	...	White	118	2	1.69	193	4	2.07	139	...	...	198	2	1.01
		Native	32	...	...	58	...	...	63	4	6.35	67	1	1.49
Umtali	...	White	92	3	3.26	156	1	0.64	157	2	1.27	192	...	...
		Native	7	1	14.29	21	4	19.05	11	2	18.18	5	...	...
Gwelo	...	White	16	...	...	18	...	...	25	...	...	42	...	...
		Native	13	...	...	16	2	12.50	15	...	...	40	...	...
Victoria	...	White	12	...	...	12	1	8.33	10	1	10.00	19	...	...
		Native	1	...	...	1	...	...	...	...	...	6	...	...
Hartley*	...	White	13	...	...	17	...	...	4	...	...	...	...	...
		Native	10	...	...	5	...	...	7	1	14.29	...	...	...
Gwanda	...	White	4	...	...	14	...	...	3	...	...	12	...	...
		Native	6	1	16.67	12	...	...	18	...	...	24	...	...
Enkeldoorn	...	White	1	...	...	3	...	...	...	...	...	1	...	...
		Native	3	...	...	8	...	...	8	...	...	2	...	...
Gatooma	...	White	...	...	...	...	...	...	3	...	...	44	1	2.27
		Native	5	...	...	13	1	7.69	6	1	16.67	22	...	...
Bulawayo	...	White	70	...	...	135	...	...	134	...	...	115	2	1.74
		Native	39	...	...	47	2	4.26	58	1	1.72	52	1	1.92
Shamva	...	White	60	...	...	34	...	...	25	...	...	117	1	0.85
Sinoia	...	White	16	...	...	27	...	...	17	...	...	42	1	2.38
		Native	8	2	25.00	5	...	...	9	...	...	10	1	10.00
Mazoe‡	...	White	4	...	...	...	...	...	...	...	...	...	...	...
Belingwe	...	White	4	...	...	4	...	...	6	...	...	1	...	...
		Native	...	...	...	11	...	...	8	1	12.50	3	...	...
Totals	...	White	410	5	1.22	613	6	0.98	523	3	0.57	783	7	0.89
		Native	124	4	3.23	197	9	4.57	203	10	4.93	231	3	1.30

* Hartley Hospital closed 30-6-18.

† Gatooma European Hospital taken over as Government institution, 30-6-18.

‡ Closed August, 1916.

Cases, with mortality rate per cent., of hæmoglobinuric fever (blackwater) admitted to hospitals in 1919, as compared with 1918, 1917 and 1916.

		1916.			1917.			1918.			1919.		
		Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	White	9	1	11·11	15	4	26·67	7	4	57·14	8	1	12·50
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Umtali	White	2	1	50·00	10	5	50·00	9	3	33·33	4	1	25·00
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Gwelo	White	...	...	...	1	...	...	...	...	...	1	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Victoria	White	3	2	66·67	...	...	...	1	...	...	1	...	...
	Native	...	...	...	...	...	...	2	1	50·00	...	...	...
Hartley*	White	4	1	25·00	3	...	...	2	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Gwanda	White	1	...	...	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Enkeldoorn	White	...	...	...	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Gatooma	White	...	...	...	...	...	...	...	...	...	3	...	...
	Native	...	...	...	...	...	...	...	...	...	1	...	...
Bulawayo	White	5	...	...	4	1	25·00	5	2	40·00	4	2	50·00
	Native	...	...	...	...	...	...	2	...	...	...	...	...
Shamva	White	7	...	...	6	1	16·67	1	...	...	8	1	12·50
Sinoia	White	3	...	...	8	2	25·00	6	1	16·67	7	2	28·57
	Native	1	1	100·00	...	...	...	...	...	...	...	...	...
Mazoe +	White	...	...	...	...	...	...	...	...	...	...	...	...
Belingwe	White	...	...	...	1	...	...	1	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Totals	White	34	5	14·71	48	13	27·08	32	10	31·25	36	7	19·44
	Native	1	1	100·00	...	...	...	4	1	25·00	1	...	...

Cases, with mortality rate per cent., of dysentery admitted to hospitals in 1919, as compared with 1918, 1917 and 1916.

		1916.			1917.			1918.			1919.		
		Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	White	30	...	...	45	2	4·44	20	...	...	27	...	...
	Native	9	...	...	42	4	9·52	15	...	...	8	...	...
Umtali	White	1	...	...	...	...	...	1	...	...	1	...	...
	Native	...	...	...	2	1	50·00	...	...	...	...	...	...
Gwelo	White	3	...	...	4	1	25·00	4	...	...	3	...	...
	Native	3	...	...	4	1	25·00	1	...	...	3	...	...
Victoria	White	4	...	...	3	...	...	9	...	...	2	...	...
	Native	3	...	...	3	...	...	2	2	100·00	...	...	...
Hartley*	White	1	...	...	2	...	...	...	...	...	...	...	...
	Native	5	...	...	1	1	100·00	1	...	...	...	...	...
Gwanda	White	1	...	...	...	...	...	...	...	...	2	...	...
	Native	1	...	...	2	...	...	4	...	...	...	...	...
Enkeldoorn	White	1	...	...	1	...	...	...	...	...	...	...	...
	Native	1	...	...	2	1	50·00	7	...	...	...	...	...
Gatooma	White	...	...	...	...	...	...	2	...	...	1	...	...
	Native	6	4	66·67	4	1	25·00	1	...	...	...	...	...
Bulawayo	White	14	...	...	17	1	5·88	18	...	...	16	1	6·25
	Native	6	2	33·33	13	2	15·38	6	1	16·67	8	1	12·50
Shamva	White	10	1	10·00	4	...	...	2	...	...	4	...	...
Sinoia	White	...	...	...	1	...	...	3	...	...	3	...	...
	Native	4	1	25·00	1	...	...	5	2	40·00	5	...	...
Mazoe +	White	...	...	...	...	...	...	...	...	...	...	...	...
Belingwe	White	...	...	...	...	...	...	...	...	...	...	...	...
	Native	2	...	...	3	...	...	...	...	...	...	...	...
Totals	White	65	1	1·54	77	4	5·19	59	...	...	65	1	1·54
	Native	40	7	17·50	77	11	14·29	42	5	11·90	24	1	4·17

* Closed August, 1916.

+ Closed 30-6-18.

Cases, with mortality rate per cent., of pneumonia admitted to hospitals in 1919,
as compared with 1918, 1917 and 1916.

		1916.			1917.			1918.			1919.		
		Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	White	14	2	14·29	25	5	20·00	14	...	...	26	2	7·69
	Native	34	6	17·64	53	15	28·30	41	6	14·63	45	12	26·67
Umtali	White	3	...	...	4	1	25·00	17	3	17·65	8	2	25·00
	Native	3	1	33·33	6	4	66·67	14	7	50·00	9	4	44·44
Gwelo	White	4	...	...	7	3	42·86	7	2	28·57	7	...	...
	Native	25	10	40·00	25	13	52·00	26	8	30·77	16	5	31·25
Victoria	White	6	2	33·33	3	...	...	2	...	...	7	4	57·14
	Native	9	2	22·22	2	1	50·00	4	1	25·00	3	...	...
Hartley*	White	1	...	...	1	...	...	1	...	...	...	...	...
	Native	21	5	23·81	18	5	27·78	9	1	11·11	...	...	...
Gwanda	White	...	...	...	...	...	...	...	...	...	...	...	...
	Native	7	3	42·86	4	4	100·00	2	1	50·00	6	3	50·00
Enkeldoorn	White	...	...	...	1	...	...	...	...	...	...	...	...
	Native	1	1	100·00	1	1	100·00	4	2	50·00	3	...	...
Gatooma	White	...	...	...	...	...	...	11	1	9·99	6	1	16·67
	Native	11	5	45·45	15	2	13·33	35	12	34·29	27	6	22·22
Bulawayo	White	10	...	...	19	4	21·05	14	3	21·43	8	4	50·00
	Native	45	13	28·89	62	14	22·58	38	13	34·47	106	40	37·74
Shamva	White	...	...	...	1	...	...	6	1	16·67	1	...	...
Sinoia	White	3	...	...	2	...	...	1	1	100·00	2	...	...
	Native	1	...	...	2	...	...	2	...	...	3	...	...
Mazoe†	White	...	...	...	...	...	...	...	...	...	...	...	...
Belingwe	White	1	...	...	...	...	...	...	...	...	1	1	100·00
	Native	6	1	16·67	5	4	80·00	4	2	50·00	4	...	...
Totals	White	42	4	9·52	63	13	20·63	73	11	15·07	66	14	21·21
	Native	163	47	28·83	193	63	32·64	179	53	29·61	222	70	31·53

Cases, with mortality rate per cent., of typhoid fever admitted to hospitals in
1919, as compared with 1918, 1917 and 1916.

		1916.			1917.			1918.			1919.		
		Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	White	9	1	11·11	9	...	...	10	...	...	10	...	...
	Native	2	...	...	1	...	...	13	2	15·38	6	...	...
Umtali	White	3	...	...	4	...	...	6	...	...	3	...	...
	Native	1	...	...	...	...	...	...	...	...	...	...	...
Gwelo	White	...	...	...	5	...	...	9	1	11·11	18	...	...
	Native	...	...	...	...	...	...	...	...	...	4	2	50·00
Victoria	White	2	...	...	1	...	...	1	...	...	1	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Hartley*	White	1	...	...	1	...	...	2	...	...	...	...	...
	Native	...	...	...	3	...	...	1	...	...	...	...	...
Gwanda	White	...	...	...	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Enkeldoorn	White	...	...	...	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Gatooma	White	...	...	...	...	...	...	...	...	...	1	...	...
	Native	...	...	...	...	...	...	1	1	100·00	...	...	...
Bulawayo	White	22	...	...	21	3	14·29	14	...	...	5	3	60·00
	Native	4	1	25·00	2	1	50·00	1	...	...	3	...	...
Shamva	White	2	...	...	1	...	...	...	...	...	...	...	...
Sinoia	White	1	1	100·00	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Mazoe†	White	...	...	...	...	...	...	...	...	...	...	...	...
Belingwe	White	1	...	...	...	...	...	...	...	...	...	...	...
	Native	...	...	...	...	...	...	...	...	...	...	...	...
Totals	White	41	2	4·88	42	3	7·14	42	1	2·38	38	3	7·89
	Native	7	1	14·29	6	1	16·67	16	3	18·75	13	2	15·38

* Closed 30-6-18.

† Closed August, 1916.

Cases, with mortality rate per cent., of scurvy admitted to hospitals in 1919, as compared with 1918, 1917 and 1916.

			1916.			1917.			1918.			1919.		
			Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	...	White	...	...	...	...	...	...	1	...	...	...	...	...
		Native	7	...	...	2	...	...	6	2	33·33	2	...	...
Umtali	...	White	...	...	...	...	...	...	...	...	...	1	...	...
		Native	4	2	50·00	...	...	...	...	...	...	13	1	7·69
Gwelo	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	14	...	...	48	2	4·17	20	2	10·00	13	1	7·69
Victoria	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	...	...	...	...	...	...	1	...	...	1	1	100·00
Hartley*	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	64	1	1·56	7	3	42·86	7	...	...	...	...	...
Gwanda	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	...	...	...	10	...	...	20	...	...	9	...	...
Enkeldoorn	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	1	...	...	...	...	...	...	...	...	3	...	...
Gatooma	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	69	10	14·49	50	3	6·00	14	1	7·14	4	1	25·00
Bulawayo	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	71	10	14·08	75	8	10·67	58	4	6·90	33	7	21·21
Shamva	...	White	...	...	...	...	...	...	...	...	...	...	...	...
Sinoia	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	38	6	15·79	4	1	25·00	2	...	...	...	...	...
Mazoe†	...	White	...	...	...	...	...	...	...	...	...	...	...	...
Belingwe	...	White	...	...	...	...	...	...	...	...	...	...	...	...
		Native	12	1	8·33	5	...	...	...	...	...	...	...	...
Totals	...	White	...	...	...	...	...	...	1	...	...	1	...	...
		Native	280	30	10·71	201	17	8·46	128	9	7·03	78	11	14·10

* Closed 30-6-18.

† Closed August, 1916.

Cases, with mortality rate per cent., of Spanish influenza admitted to hospitals in 1919, as compared with 1918.

			1918.			1919.		
			Cases.	Deaths.	Case mortality rate per cent.	Cases.	Deaths.	Case mortality rate per cent.
Salisbury	...	White	133	22	16·54	14	...	...
		Native	102	28	27·45	75	...	...
Umtali	...	White	24	...	...	3	...	...
		Native	8	1	12·50	17	1	5·88
Gwelo	...	White	80	8	10·00	...	...	...
		Native	33	4	12·12	...	...	...
Victoria	...	White	...	...	...	1	..	...
		Native	...	...	...	...	...	...
Gwanda	...	White	3	...	...	...	...	...
		Native	36	3	8·33	...	...	...
Enkeldoorn	...	White	...	...	...	...	...	...
		Native	10	...	...	...	...	...
Gatooma	...	White	34	5	14·71	1	...	...
		Native	2	...	...	3	1	33·33
Bulawayo	...	White	144	35	24·30	16	3	18·75
		Native	89	28	31·46	87	5	5·75
Shamva	...	White	61	4	6·56	3	...	...
Sinoia	...	White	9	1	11·11	...	...	...
		Native	23	4	17·39	6	...	...
Belingwe	...	White	7	2	28·57	...	...	...
		Native	7	4	57·14	...	...	...
Totals	...	White	495	77	15·56	38	3	7·89
		Native	310	72	23·23	188	7	3·72

CLASSIFICATION OF DEATHS—EUROPEANS, 1916-19.

Deaths classified according to the international classification of causes of sickness and death.

Classifi- cation No.	Disease.	Number of deaths.			
		1916	1917	1918	1919
1	Typhoid fever	5	5	2	5
4	Malaria (including 4a, malaricæchæmia)	14	12	17	40
4a	Blackwater fever	9	17	17	18
5	Small-pox ... ..	...	...	...	2
6	Measles	1	11	1	...
7	Scarlet fever	1	...	2	...
8	Whooping cough	3	...	3	1
9	Diphtheria and croup (including 9a, croup)	6	2	7	5
10	Influenza ... ..	...	1	1	...
10a	Spanish influenza ... ..	...	...	352	61
14	Dysentery	14	8	6	4
17	Leprosy ... ..	...	...	...	...
18	Erysipelas ... ..	...	1	...	...
19	Other epidemic diseases ... ..	...	1	...	1
20	Purulent infection and septicæmia	4	2	2	1
28	Tuberculosis of the lungs	10	20	17	15
29	Acute miliary tuberculosis ... ..	...	1	...	...
35	Disseminated tuberculosis ... ..	...	1	...	...
37	Syphilis ... ..	...	...	1	...
40	Cancer and other malignant tumours of the stomach and liver	4	8	1	3
41	Cancer and other malignant tumours of the peritoneum, intestines and rectum ... ..	...	2	1	2
42	Cancer and other malignant tumours of the female genital organs ... ..	...	...	2	1
43	Cancer and other malignant tumours of the breast	1	...	...	...
44	Cancer and other malignant tumours of the skin	1	1	...	...
45	Cancer and other malignant tumours of other organs, or of organs not specified	1	8	4	1
46	Other tumours (tumours of the female genital organs excepted)	1	...	1	...
47	Acute articular rheumatism	1	1	1	...
48	Chronic rheumatism and gout	1	1	...	1
50	Diabetes ... ..	...	...	2	2
51	Exophthalmic goitre	1	...	...	...
53	Leuchæmia ... ..	...	1	...	...
54	Anæmia, chlorosis ... ..	...	...	...	2
55	Other general diseases	2	1	1	3
55a	Trypanosomiasis ... ..	...	...	...	1
56	Alcoholism (acute or chronic)	5	3	2	3
60	Encephalitis ... ..	...	1	...	...
61	Simple meningitis	1	4	3	2
62	Locomotor ataxy	1	1	...	...
63	Other diseases of the spinal cord ... ..	...	2	1	...
64	Cerebral hæmorrhage, apoplexy	4	2	5	4
66	Paralysis without specified cause	3	2	3	1
68	Other forms of mental alienation	2	1	1	...
69	Epilepsy	1	1	3	2
70	Convulsions (non-puerperal)	1	1	...	...
71	Convulsions of infants	7	12	5	8
73	Neuralgia and neuritis... ..	...	1	...	1
74	Other diseases of the nervous system ... ..	...	...	1	2
76	Diseases of the ears ... ..	...	...	...	1
77	Pericarditis... ..	...	1	...	...
78	Acute endocarditis ... ..	...	1	...	...
79	Organic diseases of the heart	11	14	6	11
80	Angina pectoris ... ..	...	...	1	1
81	Diseases of the arteries, atheroma, aneurism, etc.	2	...	1	2
82	Embolism and thrombosis	1	...	2	...
85	Hæmorrhage; other diseases of the circulatory system	1	...	1	...
87	Diseases of the larynx ... ..	...	1	2	2
89	Acute bronchitis	3	6	4	7
90	Chronic bronchitis ... ..	...	3	...	1
91	Broneo-pneumonia	4	5	3	2
92	Pneumonia	18	25	37	33
93	Pleurisy ... ..	...	1	...	...
94	Pulmonary congestion; pulmonary apoplexy... ..	...	1	...	...
96	Asthma ... ..	...	...	1	...
	Forward				

Classifi- cation No.	Disease.	Number of deaths.			
		1916	1917	1918	1919
98	Other diseases of the respiratory system (tuberculosis excepted) ... ..	...	...	...	1
98a	Miners' phthisis	3	...	2	1
100	Diseases of the pharynx	1	1	3	...
101	Diseases of the oesophagus	1	...	...	...
102	Uleer of the stomach ... ..	...	1	...	1
103	Other diseases of the stomach (cancer excepted)	1	1	1	1
104	Diarrhoea and enteritis—under two years	7	6	14	3
105	Diarrhoea and enteritis—two years and over (including 105a), due to alcoholism	1	5	4	...
108	Appendicitis and typhilitis	8	5	2	3
109	Hernia, intestinal obstructions	3	2	5	2
113	Cirrhosis of the liver (including 113a), due to alcoholism ... ..	...	2	1	5
114b	Biliary calculi	1	1	...	...
115	Other diseases of the liver ... ..	...	2	2	2
116	Diseases of the spleen	1	...	1	...
117	Simple peritonitis (non-puerperal)... ..	...	2	3	1
119	Acute nephritis	3	2	4	8
120	Bright's disease	4	7	2	4
122	Other diseases of the kidneys and annexa	1	1	1	1
123	Calculi of the urinary passages	1	...	...	...
124	Diseases of the bladder ... ..	...	1	...	...
125	Diseases of the urethra, urinary abscess, etc. ... ..	...	...	1	1
126	Diseases of the prostate	1	1	...	2
129	Uterine tumour (non-cancerous) ... ..	...	...	1	...
130	Other diseases of the uterus ... ..	...	1	...	...
134	Accidents of pregnancy ... ..	...	1	...	1
135	Puerperal hæmorrhage... ..	1	...	1	...
136	Other accidents of labour	1	1	...	1
139	Puerperal phlegmasia alba dolens, embolus, sudden death following childbirth (not otherwise defined) ... ..	...	1	...	...
140	Following childbirth (not otherwise defined)	1	...	2	...
142	Gangrene ... ..	...	...	1	...
143	Furuncle ... ..	...	...	...	1
144	Acute abscess	1	...	...	1
146	Diseases of the bones (tuberculosis excepted)... ..	...	...	1	1
150	Congenital malformations (stillbirth not included) ... ..	...	2	1	...
151	Congenital debility, icterus and sclerema	17	12	19	20
152	Other causes peculiar to early infancy	4	1	1	1
154	Senility ... ..	...	3	4	7
155	Suicide by poison	2	2	...	5
158	Suicide by drowning ... ..	...	...	1	...
159	Suicide by firearms	2	5	3	2
163	Other suicides ... ..	...	3	3	3
165	Other acute poisonings... ..	4	...	1	3
167	Burns (conflagration excepted)	1	2	2	3
168	Absorption of deleterious gases (conflagration excepted)... ..	1	1	1	1
169	Accidental drowning	2	...	3	2
170	Traumatism by firearms	2	1	3	2
172	Traumatism by fall ... ..	...	2	1	...
173	Traumatism in mines and quarries ... ..	...	2	1	...
175	Traumatism by other crushing (vehicles, railways, landslides, etc.)	1	3	2	3
176	Injuries by animals	1	...	...	1
177	Starvation ... ..	...	...	3	...
179	Effects of heat	1	...	...	1
180	Lightning	1	...	...	...
185	Fractures (cause not specified)	2	1	1	1
186	Other violence	2	3	...	1
187	Ill-defined organic disease ... ..	...	...	3	...
188	Sudden death	3	...	2	...
189	Causes of death not specified or ill-defined	12	18	23	23
	Total	241	299	653	372

CLASSIFICATION OF DEATHS—NATIVE, 1916-19.

Deaths classified according to the international classification of causes of sickness and death.

Classifi- cation No.	Disease.	Number of deaths.			
		1916	1917	1918	1919
1	Typhoid fever	1	2	3	3
4	Malaria	4	6	15	6
4a	Blackwater fever (including ty, malarial cachexia) ...	...	...	1	1
5	Small-pox ... ..	...	...	...	1
6	Measles ... ..	...	3	...	...
8	Whooping cough	1	...	...	...
9	Diphtheria and croup (including 9a, croup) ...	...	...	...	1
10	Influenza	1	2	...	...
10a	Spanish influenza ... ..	...	...	186	21
14	Dysentery	5	11	6	3
17	Leprosy	2	...	...	...
19	Other epidemic diseases ... ..	...	1	...	...
20	Purulent infection and septicæmia	4	7	4	2
24	Tetanus	2	3	...	...
26	Pallagra ... ..	...	...	1	2
28	Tuberculosis of the lungs	40	49	60	68
29	Acute miliary tuberculosis ... ..	...	...	1	1
30	Tuberculosis meningitis ... ..	...	...	...	1
31	Abdominal tuberculosis	2	...	...	3
32	Pott's disease ... ..	...	1	3	...
34	Tuberculosis of the other organs ... ..	...	...	1	...
35	Disseminated tuberculosis	1	2	...	...
37	Syphilis	2	4	2	3
39	Cancer and other malignant tumours of the buccal cavity	1	1	...	...
40	Cancer and other malignant tumours of the stomach and liver	3	2	1	2
41	Cancer and other malignant tumours of the peritoneum, intestines and rectum	1	...	1	...
42	Cancer and other malignant tumours of the female genital organs ... ..	...	...	2	...
43	Cancer and other malignant tumours of the breast ...	1	...	...	...
45	Cancer and other malignant tumours of other organs not specified	3	4	2	3
46	Other tumours (tumours of the female genital organs excepted) ... ..	...	...	...	1
47	Acute articular rheumatism ... ..	...	...	1	...
48	Chronic rheumatism and gout ... ..	...	1	...	...
49	Scurvy	17	16	7	11
53	Leucæmia ... ..	...	...	...	1
54	Anæmia, chlorosis ... ..	...	...	...	1
55	Other general diseases	1	...	1	...
58	Other chronic occupational poisonings ... ..	...	...	...	1
60	Encephalitis ... ..	...	1	1	...
61	Simple meningitis	5	8	6	6
61a	Cerebro-spinal fever ... ..	...	...	1	...
61c	Meningitis, other forms	6	...	...	2
63	Other diseases of the spinal cord	1	2	...	...
64	Cerebral hæmorrhage, apoplexy	2	4	1	2
66	Paralysis without specified cause ... ..	...	3	...	...
67	General paralysis of the insane ... ..	...	1	...	...
68	Other forms of mental alienation	6	6	12	4
69	Epilepsy	1	1	3	4
71	Convulsions of infants	2	2	2	1
74	Other diseases of the nervous system	3	5	...	...
76	Diseases of the ears ... ..	...	1	1	...
77	Pericarditis	1	...	...	...
78	Acute endocarditis ... ..	...	1	1	1
79	Organic diseases of the heart	1	5	5	3
81	Diseases of the arteries, atheroma, aneurism, etc. ...	...	2	...	...
82	Embolism and thrombosis ... ..	...	...	1	1
84	Diseases of the lymphatic system (lymphangitis, etc.) ...	...	1	...	...
85	Hæmorrhage: other diseases of the circulatory system ...	2	...	...	...
86	Diseases of the nasal fossæ	1	...	...	...
89	Acute bronchitis	2	1	1	1
90	Chronic bronchitis ... ..	...	...	...	1
91	Broncho-pneumonia ... ..	...	1	2	2
92	Pneumonia	58	66	51	74
93	Pleurisy	1	2	2	1

Classification No.	Disease.	Number of deaths.			
		1916	1917	1918	1919
94	Pulmonary congestion; pulmonary apoplexy...	1	...	...	...
95	Gangrene of the lung ...	1	...	...	1
102	Ulcer of the stomach ...	...	1	...	...
103	Other diseases of the stomach (cancer excepted) ...	...	1	...	1
104	Diarrhea and enteritis—under two years ...	5	5	4	2
105	Diarrhea and enteritis—two years and over (including 105a), due to alcoholism ...	...	2	3	1
108	Appendicitis and typhlitis ...	2	1	...	...
109	Hernia, intestinal obstructions ...	3	3	1	1
110	Other diseases of the intestines ...	...	...	...	2
113	Cirrhosis of the liver (including 113a), due to alcoholism ...	1	2	1	1
115	Other diseases of the liver ...	1	...	...	...
116	Diseases of the spleen ...	2	...	...	...
117	Simple peritonitis (non-puerperal)...	1	3	1	...
118	Other diseases of the digestive system (cancer and tuberculosis excepted) ...	...	1	...	...
119	Acute nephritis ...	8	4	2	5
120	Bright's disease ...	2	2	4	1
121	Chyluria ...	2	...	...	...
124	Diseases of the bladder ...	...	3	...	1
125	Diseases of the urethra, urinary abscess, etc. ...	...	...	...	1
131	Cysts and other tumours of the ovary ...	1	...	...	...
134	Accidents of pregnancy ...	1	...	...	...
135	Puerperal hemorrhage... ..	...	...	...	1
136	Other accidents of labour ...	...	1	...	...
140	Following childbirth (not otherwise defined) ...	...	...	1	...
142	Gangrene ...	2	1	...	...
144	Acute abscess ...	...	2	2	1
145	Other diseases of the skin and annexa ...	...	...	2	1
146	Diseases of the bones (tuberculosis excepted) ...	...	...	1	1
147	Diseases of the joints (tuberculosis and rheumatism excepted) ...	...	...	1	2
150	Congenital malformations (stillbirth not included) ...	...	...	1	1
151	Congenital debility, icterus and sclerema ...	5	3	4	12
154	Senility ...	3	...	1	3
156	Suicide by asphyxia ...	...	1	...	...
159	Suicide by firearms ...	...	...	1	...
165	Other acute poisonings... ..	...	1	...	1
167	Burns (conflagration excepted) ...	6	4	3	3
169	Accidental drowning ...	...	1	2	...
170	Traumatism by firearms ...	2	...	...	1
173	Traumatism in mines and quarries ...	1	1	2	1
175	Traumatism by other crushing (vehicles, railways, landslides, etc.) ...	1	1	...	...
177	Starvation ...	...	...	1	...
184	Homicide by other means ...	1	...	...	...
185	Fractures (cause not specified) ...	8	10	7	6
186	Other violence ...	1	4	...	...
186a	Execution ...	4	6	10	8
187	Ill-defined organic disease ...	3	2	...	...
188	Sudden death ...	1	...	...	...
189	Causes of death not specified or ill-defined ...	14	17	9	7
	Total ...	267	311	452	305

